JURISDICTIONAL DELINEATION
FOR THE FORRESTER CREEK INDUSTRIAL PARK
PBS&J, February 19, 2009

Draft Jurisdictional Delineation

for the Proposed

Forrester Creek Industrial Park Project

Prepared for:

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February 19, 2009

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1.0 INTRODUCTION

This report presents the results of a jurisdictional wetland delineation for the Forrester Creek Industrial Park Project. The project site is 31.5 acres and is located at the northwest corner of Weld Boulevard and Cuyamaca Street in El Cajon, California (Figures 1 and 2). The project proposes to construct 463,000 square feet of multi-tenant industrial space, combining light industrial and warehouse uses, site access and circulation improvements, utilities improvements, and landscaping. The project is located within the El Cajon USGS 7.5 minute quadrangle. Figures 1 and 2 provide the regional and vicinity locations of the proposed project.

Elevations throughout the project site range from approximately 350 feet above mean sea level (AMSL) to approximately 410 feet AMSL. The project site is currently vacant with the exception of a small, abandoned single-story building near the southern boundary of the project site. A channelized portion of Forrester Creek, a blue-line stream that flows into the San Diego River and ultimately the Pacific Ocean, borders the northeast corner of the project site (Figure 2).

The project site supports disturbed Diegan coastal sage scrub, broom baccharis scrub, non-native grassland, eucalyptus woodland, and disturbed habitat. All of these habitats are present in the vicinity of the drainage features located within the project site.

2.0 METHODOLOGY

This wetland delineation was conducted in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual,* and this report was prepared in accordance with the December 2006 *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. A Level 2 Onsite Inspection was conducted (as defined in the *Wetland Delineation Manual*), evaluating three parameters that identify and delineate the boundaries of jurisdictional wetlands, including (1) the dominance of wetland vegetation; (2) the presence of hydric soils; and (3) the presence of hydrologic conditions that result in periods of inundation or saturation on the surface from flooding or ponding. The *National List of Plant Species That Occur in Wetlands: California (Region 0)* was used to determine the wetland indicator status of plants observed within the project site. The *Soil Survey San Diego Area, California* and the *National List of Hydric Soils* were used to identify soil types within the project site.

In June 2008, PBS&J biologists delineated the boundaries of and collected field data for six drainage features locate within the project boundary. Arid West Data Sheets were prepared for sample sites within two of the drainage features, which are located in Appendix A. Representative photographs of the drainage features are located in Appendix B.

Data on vegetation, soils, and hydrology characteristics were recorded in the field and sampling points were located in areas considered to be potential wetland habitat. All sample locations were examined for the presence of positive hydrologic indicators (e.g., direct evidence of inundation, sediment deposits, saturated soils, oxidized rhizospheres). Soils were examined (via soil test pits) to determine composition, matrix color, and the presence of reducing conditions (e.g., mottles). The percent dominance by hydrophytic vegetation was also recorded at each sample location. Coordinates of each sample location and measurement location were recorded in the field with a Garmin hand-held GPS.

The boundary separating wetland from upland habitat was the point where dominant (or co-dominant) hydrophytic plant species merge with upland plant species; where wetland soils begin to exhibit redoximorphic features and reducing conditions; and where signs of wetland hydrology were present, such as algal matting, sediment deposits, shelving, watermarks, and evidence of inundation. Data points were taken in two of the drainage features that exhibited potential wetland features.

3.0 VEGETATION

The predominant vegetation found within the project site includes disturbed Diegan coastal sage scrub, broom baccharis scrub, non-native grassland, eucalyptus woodland, and disturbed habitat. Figure 3 shows location of the vegetation classifications within the project site.

Disturbed Diegan Coastal Sage Scrub

Diegan coastal sage scrub is comprised of low, soft-woody subshrubs to about 1 meter (3 ft) high, many of which are facultatively drought-deciduous. The dominant shrubs within the project site include California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum* var. *fasciculatum*). Disturbed Diegan coastal sage scrub contains many of the same shrub species as undisturbed Diegan coastal sage scrub but is sparser and has a higher proportion of non-native annual species. On site, disturbed Diegan coastal sage scrub occurs in the two patches in the western central portion of the site (Figure 3).

Broom Baccharis Scrub

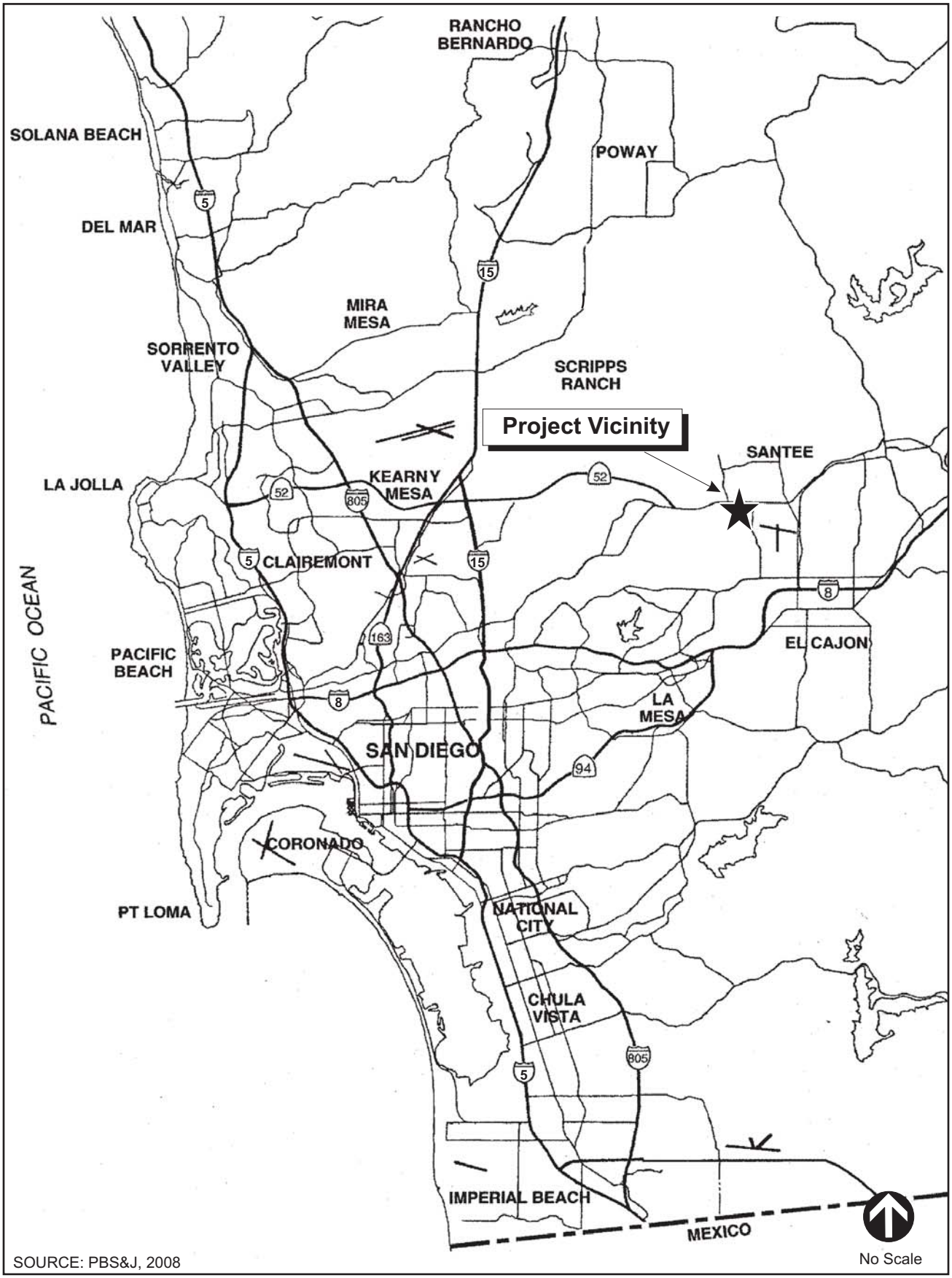
Areas designated as broom baccharis scrub are dominated by broom baccharis (*Baccharis sarothroides*) with an understory of weedy, ruderal species. This species is common on sandy or silty slopes and flats. On site, broom baccharis scrub occurs in the west central portion of the site (Figure 3).

Non-native grassland

Non-native grassland is a dense to sparse cover of annual grasses, often associated with numerous species of showy-flowered native annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. On site, non-native grassland consists of black mustard (*Brassica nigra*) ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), rabbitfoot (*Polypogon monspeliensis*), Bermuda grass (*Cynodon dactylon*), rattail fescue (*Vulpia myuros* var. *hirsuta*) and red brome (*Bromus madritensis* ssp. *rubens*). Most of the annual introduced species that compromise the majority of species and biomass within the non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. These two factors, in addition to intensive grazing and agricultural practices in conjunction with severe droughts, have contributed to the successful invasion and establishment of these species and the replacement of native grasslands with annual dominated non-native grassland (Jackson 1985). On site, non-native grassland occurs dispersed throughout the project site (Figure 3).

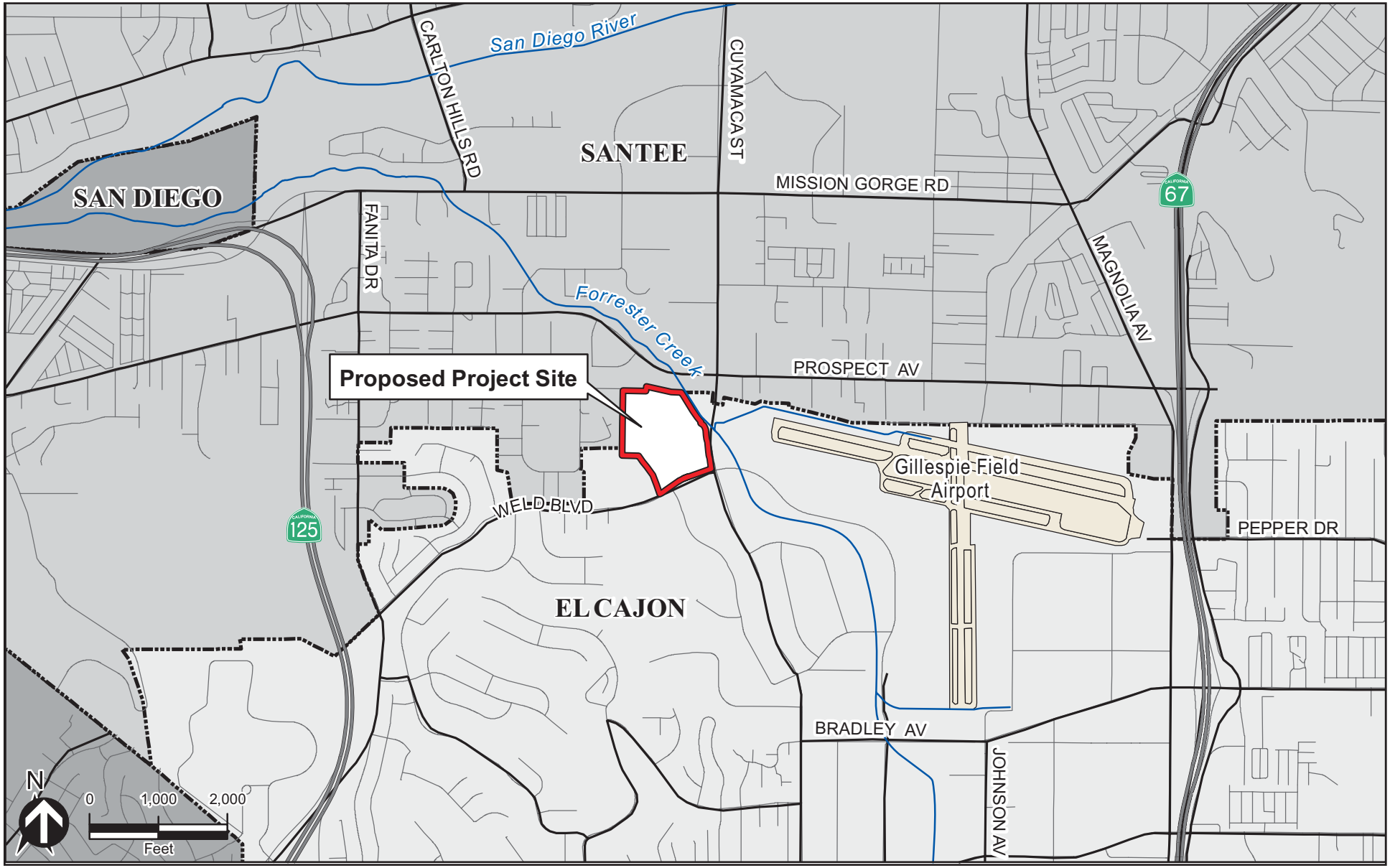
Eucalyptus Woodland

Eucalyptus woodland is dominated by eucalyptus (*Eucalyptus* sp.), an introduced species that produces a large amount of leaf and bark litter. The chemical and physical characteristics of this litter limit the ability of other species to grow in the understory, with a resultant decrease in floristic diversity. Eucalyptus trees



SOURCE: PBS&J, 2008

REGIONAL LOCATION MAP **FIGURE 1**



SOURCE: 2004 ESRI Streetmap Dataset

PROJECT SITE VICINITY MAP **FIGURE 2**

have been planted historically for a variety of reasons, but they are particularly popular owing to its rapid growth rate. Given sufficient moisture, eucalyptus woodland has become naturalized and its range has expanded greatly to the detriment of many riparian areas. One small patch of eucalyptus woodland occurs in the western portion of the site (Figure 3).

Disturbed Habitat

Disturbed habitat on site includes land cleared of vegetation (e.g., dirt roads) or contains a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (e.g., previously cleared or abandoned landscaping). On site, disturbed habitat consists of the driving range and cleared dirt areas (Figure 3).

Developed Land

Developed land is where permanent structures and/or pavement have been placed that prevents the growth of vegetation or where landscaping is clearly tended and maintained. On site, developed land consists of the driving range building and parking lot, County of San Diego equipment repair facility, cement processing facility, and the culverted portion of Forrester Creek (Figure 3).

4.0 SOILS

The Natural Resource Conservation Service mapped two soil types within the project site (Figure 3). These include Fallbrook-Vista sandy loams, 9 to 15 percent slopes and Salina clay loam, 0 to 2 percent slopes. As shown in Figure 4, the Fallbrook Vista complex is located in the western portion of the project site and the Salinas soil is located in the eastern portion of the project site. General characteristics associated with these soils types are described below.

Fallbrook-Vista sandy loams, 9 to 15 percent slopes (FvD)

This complex is about 50 percent Fallbrook sandy loam and 40 percent Vista sandy loam. It occurs on uplands at elevations of 200 to 3,000 feet. Fallbrook sandy loam is moderately permeable and Vista sandy loam is moderately rapidly permeable. Both soils are well drained and runoff is medium. This soil is not listed as a hydric soil on the San Diego County Area Hydric Soils List.

Placentia sandy loam, thick surface, 2 to 9 percent slopes (PfC)

The Placentia series consists of moderately well drained sandy loams that have a sandy clay subsoil. These soils formed in granitic alluvium. This soil is gently to moderately sloping and has a 20- to 36-inch surface layer. Runoff is slow to medium, and the erosion hazard is slight to moderate. This soil is listed as a hydric soil on the San Diego County Area Hydric Soils List.

Salinas clay loam, 0 to 2 percent slopes (SbA)

The Salina series is typically found on flood plans and alluvial fans at elevations from 25 to 300 feet. The surface soil layer ranges from dark grayish-brown to dark gray in color and from 20 to 25 inches in thickness. This soils exhibits good drainage, permeability is moderately slow, and runoff is very slow. This soil is not listed as a hydric soil on the San Diego County Area Hydric Soils List.

SOURCE: City of El Cajon, 2008; Landiscor, 2003

VEGETATION COMMUNITIES WITHIN THE PROJECT SITE **FIGURE 3**

5.0 HYDROLOGY

Several drainage features are located throughout the project site. The locations of the drainage features are shown in Figure 4 and individually in Figures 5 through 8. The hydrology of each feature is discussed below. Associated photographs of each drainage are provided in Appendix B.

Drainage A

Drainage A is located in the south-central portion of the site. The source of water into Drainage A is from off-site nuisance flows which flow from off-site areas to the south of the project site, through a catch basin on Weld Boulevard, and through a 36-inch concrete pipe culvert (Photos A-1 and A-2). The origin of the drainage, near the culvert, is an isolated, incised drainage caused by erosion from the off-site nuisance flows. The bottom of the drainage is coarse alluvial sand with pebbles. The dominant vegetation along bank in this area is sow-thistle (*Sonchus oleraceus*) and Mexican fan palm (*Washingtonia robusta*). Rabbitfoot is restricted to the active channel and adjacent to the channel and non-native grasses are located on the banks (Photo A-3).

In the upper reach of the drainage, pools of standing water were located within the grove of salt cedar. A tributary swale connects in the middle reach of Drainage A. This swale does not have a defined bed and bank or OHWM. No functional wetland or riparian vegetation is present and the tributary is surrounded by non-native grassland (Photo A-4).

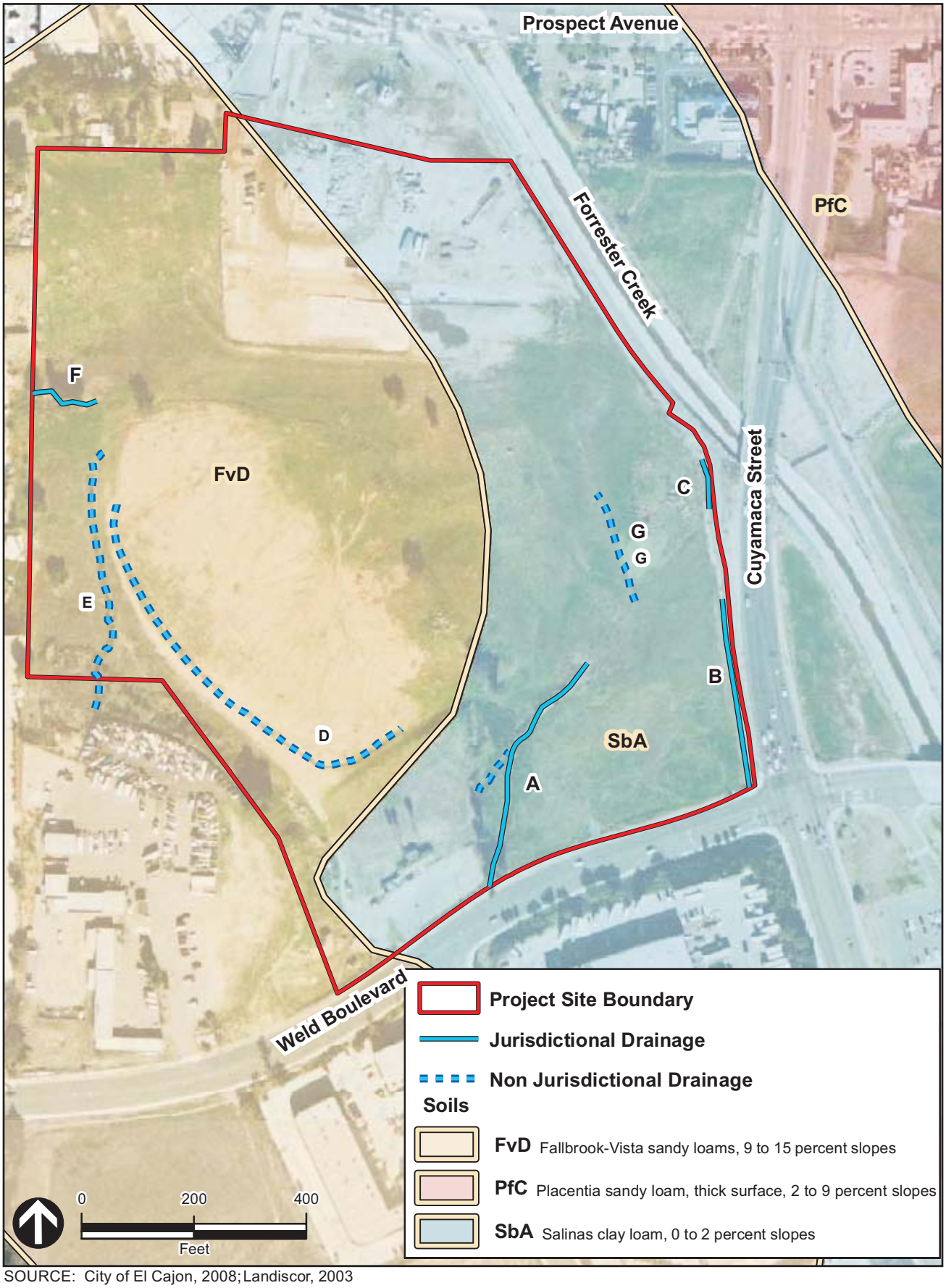
Approximately 35 feet downstream of the culvert at the downstream limit of a small grove of salt cedar (*Tamarix* sp.), a soil pit (Transect A-2) was dug (Figure 5 and Photo A-5). The data sheet for this soil pit, available in Appendix A, concluded that hydrophytic vegetation, hydric soils, and wetland hydrology were present.

The dominant plant species from the middle reach to the terminus include rabbitfoot, curly dock (*Rumex crispus*), flat-top sedge (*Cyperus eragrostis*), scarlet pimpernel (*Anagallis arvensis*), sow thistle, black mustard, and Russian thistle (*Salsola tragus*). As the drainage approaches its terminus, only a marginable slope is present and the bank and bed dissipate to swale-like features which transitions into non-native grassland. No functional wetland or riparian vegetation is present (Photos A-6 and A-7). The dominant species at the terminus are wild radish (*Raphanus sativus*) and cheeseweed (*Malva parviflora*).

In summary, Drainage A is a non-jurisdictional feature under ACOE or RWCQB because it is an isolated feature that has no downstream connectivity to a navigable waterway. This feature may be jurisdictional under CDFG due to the presence of a marginal streambed and riparian vegetation. Figure 5 depicts the area under potential CDFG jurisdiction.

Drainage B

Drainage B is located in the southwest corner of the project site. The source of water to Drainage B is from off-site nuisance flows which flow from areas south of the project site. These off-site flows enter the project site through a catch basin located on Weld Boulevard into a double pipe concrete culvert (Photo B-1). Each pipe has a diameter of 2 feet; the bottom one-third of the western pipe is filled with sediment. Based on the location of the bed and bank, it appears that water only flows through the eastern pipe (Photo B-2). The dominant plant species in this area are black mustard and horseweed (*Conyza canadensis*).

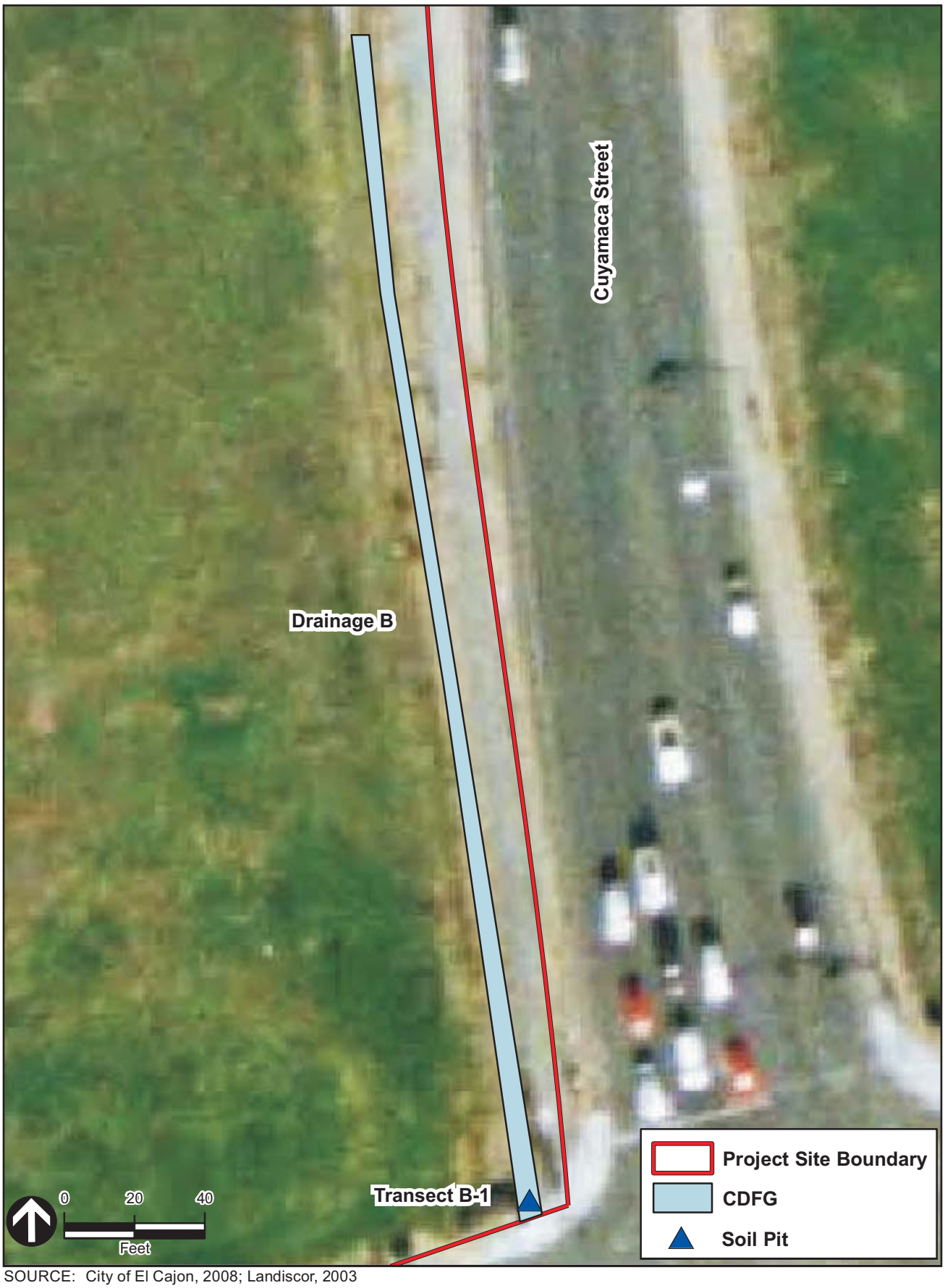


SOURCE: City of El Cajon, 2008; Landiscor, 2003

SOILS WITHIN THE PROJECT SITE **FIGURE 4**

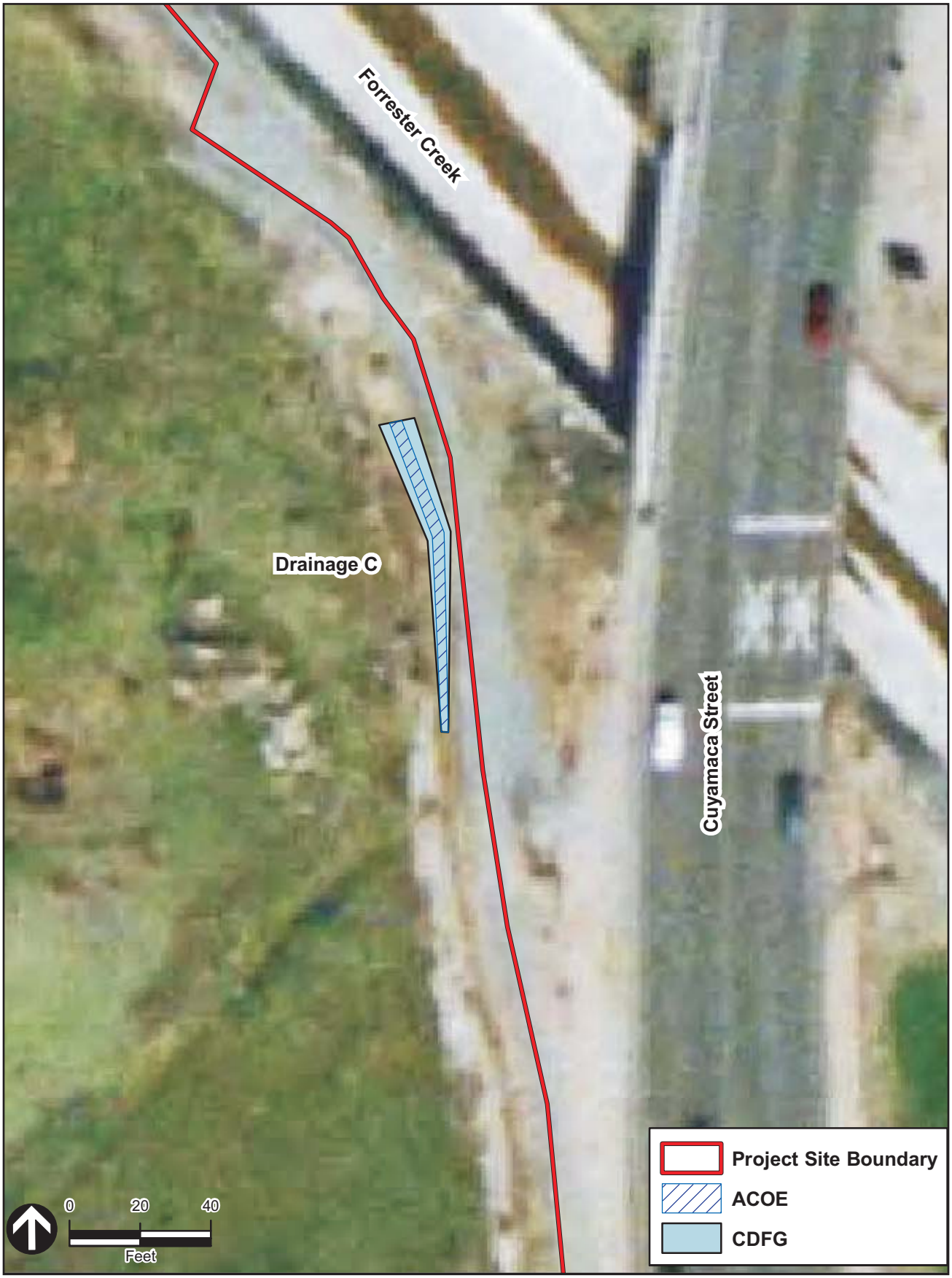
SOURCE: City of El Cajon, 2008; Landiscor, 2003

DRAINAGE A JURISDICTIONAL AREA **FIGURE 5**



SOURCE: City of El Cajon, 2008; Landiscor, 2003

DRAINAGE B JURISDICTIONAL AREA **FIGURE 6**



SOURCE: City of El Cajon, 2008; Landiscor, 2003

DRAINAGE C JURISDICTIONAL AREA **FIGURE 7**

SOURCE: City of El Cajon, 2008; Landiscor, 2003

DRAINAGE F JURISDICTIONAL AREA **FIGURE 8**

A soil pit was dug in the vicinity of the origin of Drainage B (Transect B-1) (Figure 6 and Photo B-3). The data sheet for this soil pit, available in Appendix A, concluded that hydrophytic vegetation, hydric soils, and wetland hydrology were present.

Toward the lower reach of Drainage B, the channel is less discernable. There is also more vegetative growth than is present in the upper and middle reaches. Dominant plant species in the middle reach is rooted flat-top vegetation approximately 1 inch tall and dominant species in the lower reach include black mustard, horseweed, and salt cedar (Photos B-4 through B-7).

Drainage B ends at an asphalt path, where the flow potentially converts to sheet flow (Photo B-8).

In summary, Drainage B is a non-jurisdictional feature under ACOE and RWQCB because there is no downstream connectivity to a navigable waterway. Potential sheet flows over the asphalt path located at the feature's terminus may provide downstream connectivity to Drainage C and Forrester Creek; however, how often sheet flows occur and to what degree the sheet flows occur is unknown. There were marginal signs observed that sheet flows occur with regularity. Because this feature supports a streambed and bank, this feature would be jurisdictional under CDFG. Figure 6 depicts the area under potential CDFG jurisdiction.

Drainage C

Drainage C is located in the east central portion of the site. The origin of Drainage C is located approximately 150 feet north of the terminus of Drainage B. The source of water to Drainage C appears to be potential sheet flow over the asphalt path from the terminus of Drainage B (Photo C-1). The origin is located at a sinkhole, approximately 10-15 feet long and one foot wide, within an asphalt path (Photo C-2). At the end of the asphalt path, the channel is a sandy bottom with cobbly sand and sparse vegetation (Photo C-3).

Drainage C ends at a 36-inch concrete pipe culvert. Flows through this culvert are deposited into a channelized section of Forrester Creek (Figure 7). At the culvert opening the channel bottom is sandy and pebbly (Photos C-4 through C-6). The dominant vegetation is non-native grasses including red brome and rattail fescue, black mustard, horseweed, and rabbitfoot.

Because of this drainage's connectivity to Forrester Creek, Drainage C is potentially under the jurisdiction of ACOE and RWQCB. Also, due to the presence of a marginal streambed and bank, Drainage C may also be under the jurisdiction of CDFG.

Drainage D

Drainage D is located in the central portion of the site. This drainage is an isolated roadside ditch that is approximately 750 feet long and was created by erosion. The dominant vegetation in this area includes non-native grasses including red brome and ripgut brome, black mustard, broom baccharis, and Russian thistle. No functional wetland or riparian vegetation is present.

There is no defined bed and bank or OHWM at the northern end of the drainage (Photo D-1). Approximately in the middle of the drainage is an area of fill which would preclude flow to the southern section of the drainage. There is no culvert to allow flow and no evidence of ponding on either side of the filled in area. The southern end of the drainage shows evidence of limited flow. Drainage D is a non-

jurisdictional feature due to its isolation, lack of downstream connectivity, and field indicators. This feature would not be under the jurisdiction of ACOE, RWQCB, or CDFG. (Photos D-2 and D-3).

Drainage E

Drainage E is located in the west central portion of the site. The drainage is an upland, isolated, erosional feature with no discernable OHWM. The length of the drainage is approximately 475 feet long and is located in disturbed Diegan coastal sage scrub, broom baccharis scrub, and disturbed habitat. The origin is at the project site boundary adjacent to an industrial use area on top of a hill. Near the origin, Drainage E is deeply incised (Photo E-1). At the bottom of the hill, the channel of the drainage varies between more swale-like feature and deeply incised areas. At its terminus, Drainage E transitions to a swale into nonnative grassland (Photo E-2). Drainage E is a non-jurisdictional feature due to its isolation, lack of downstream connectivity, and field indicators. This feature would not be under the jurisdiction of ACOE, RWQCB, or CDFG.

Drainage F

Drainage F is located in the west central portion of the site. This feature is an isolated feature fed by off-site nuisance flows from areas west of the project site. These off-site flows enter the project site through a square concrete culvert and spillway located adjacent to a residential area (Photo F-1). Water was present at the time of the field visit (Photo F-2). The dominant plant species at the origin of the drainage is broadleaf cattail (*Typha latifolia*).

Approximately 6 feet downstream of the culvert and spillway, there is a tributary that flows to the north around a large eucalyptus tree. There is limited understory vegetation. It appears that there would be limited water flow in this tributary and only during high flow events (Photo F-3).

The domination of broadleaf cattail remains the dominant plant species in the vicinity of the main channel from the culvert and spillway to the end of the northern tributary.

In the middle reach of the drainage, there is a eucalyptus overstory with an understory of disturbed habitat dominated by rabbitfoot, curly dock, and bristly ox-tongue (*Picris echiodes*). Water was also present during the field visit in this area. In the lower reaches, from outside of the eucalyptus overstory to the terminus, broadleaf cattails are again the dominant vegetation. Other plant species include jimson weed (*Datura wrightii*) and small palms. The drainage transitions into a swale-like feature into non-native grassland vegetation (Figure 8 and Photos F-4 through F-6).

In summary, Drainage F is a non-jurisdictional feature under ACOE or RWCQB because it is an isolated feature that has no downstream connectivity to a navigable waterway. This feature may be jurisdictional under CDFG due to the presence of a streambed and riparian vegetation. Figure 8 depicts the area under potential CDFG jurisdiction.

Drainage G

Drainage G is located in the east central portion of the site. The drainage is an isolated, swale-like feature with no discernable OHWM or bed and bank. The drainage is located in non-native grassland vegetation. No functional wetland or riparian vegetation is present (Photo G-1). Drainage G is a non-jurisdictional

feature due to its isolation, lack of downstream connectivity, and field indicators. This feature would not be under the jurisdiction of ACOE, RWQCB, or CDFG.

Drainage H

Drainage H is located to the northeast of the project, north of Forrester Creek. This area of the project site would not be impacted by grading, project construction, or project operation. Because neither the area in the vicinity of Drainage H nor Drainage H itself would be impacted by the proposed project, this drainage was not investigated.

6.0 SUMMARY OF FINDINGS

The jurisdictional delineation field survey results conclude that approximately 0.006 acres within the project site would be under the jurisdiction of the ACOE and RWQCB and 0.132 acres within the project site would be under the jurisdiction of CDFG. These results are described below and summarized in Table 1.

Table 1. Potential Impact Acreages to Drainages within the Project Site

Drainage Feature	ACOE Jurisdiction (acres)	RWQCB Jurisdiction (acres)	CDFG Jurisdiction (acres)
A	0.0	0.0	0.054
B	0.0	0.0	0.037
C	0.006	0.006	0.012
D	0.0	0.0	0.0
E	0.0	0.0	0.0
F	0.0	0.0	0.029
G	0.0	0.0	0.0
Total Area	***0.006***	***0.006***	***0.132***

Army Corps of Engineers Jurisdiction 0.006 acres

One drainage is under the jurisdiction of the ACOE. Drainage C would be under ACOE jurisdiction because of its downstream connectivity to Forrester Creek. Forrester Creek is a blue-line stream, which is a tributary to the San Diego River, which outfalls to the Pacific Ocean.

Drainage C would be classified as a "water of the U.S." The vegetation present within and adjacent to the drainage was typical upland species. Riparian vegetation was not present and the soils within the drainage were sandy. Because the appropriate field indicators were not present, no "wetland waters of the U.S." are located within or adjacent to this drainage.

Regional Water Quality Control Board 0.0006 acres
One drainage is under the jurisdiction of the RWQCB. Drainage C would be under ACOE jurisdiction because of its downstream connectivity to Forrester Creek. Forrester Creek is a blue-line stream, which is a tributary to the San Diego River, which outfalls to the Pacific Ocean.

California Department of Fish and Game 0.132 acres
Four drainages are subject to CDFG jurisdiction: Drainages A, B, C, and F. These drainages have marginal streambeds and banks and support riparian vegetation.

Non-jurisdictional features
Three drainage features within the project site are considered to be non-jurisdictional. Drainages D and E are isolated, erosional features and Drainage G is a swale-like feature. There was no presence of functional riparian or wetland vegetation in the vicinities of these drainages.

7.0 SUPPLEMENTAL INFORMATION

Directions to the Project Site

As shown in Figure 2, the project site is located northwest of the intersection of Cuyamaca Street and Weld Boulevard. Weld Boulevard is between Mission Gorge Road and Fletcher Parkway. From Cuyamaca Street, turn west onto Weld Boulevard. Project access is on the northern side of the street approximately 350 feet west of Cuyamaca Street.

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8.0 REFERENCES

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Appendix A
Data Sheet

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Forrester Creek Industrial Park | City/County: El Cajon / San Diego | Sampling Date: 6/13/2008

Applicant/Owner: City of El Cajon | State: CA | Sampling Point: Transect A2

Investigator(s): Karl Osmundson, Kate Gentles | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Drainage feature | Local relief (concave, convex, none): concave | Slope (%): <5%

Subregion (LRR): C - Mediterranean California | Lat: 32.828 N | Long: 116.985W | Datum: WGS 84

Soil Map Unit Name: Salinas | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
	%		
Sapling/Shrub Stratum			
1. *Tamarix sp.*	30	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	30 %		
Herb Stratum			
1. *Polypogon monspeliensis*	35	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	35 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 35 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	35	x 2 =	70
FAC species	30	x 3 =	90
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	65 (A)		160 (B)

Prevalence Index = B/A = 2.46

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: Transect

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-4	10YR 3/2	100					Coarse sand	
4-5	10YR 4/2	100					Coarse sand	
5+								Water table

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [x] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [x] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Granitic bedrock

Depth (inches): 10 inches

Hydric Soil Present? Yes (•) No ( )

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [x] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [x] Aquatic Invertebrates (B13)
- [x] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [x] Water Marks (B1) (**Riverine**)
- [ ] Sediment Deposits (B2) (**Riverine**)
- [x] Drift Deposits (B3) (**Riverine**)
- [x] Drainage Patterns (B10)
- [x] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (•)	Depth (inches):	
Water Table Present?	Yes (•) No ( )	Depth (inches):	5
Saturation Present? (includes capillary fringe)	Yes (•) No ( )	Depth (inches):	4

Wetland Hydrology Present? Yes (•) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Aquatic invertebrates = mosquito larvae

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Forrester Creek Industrial Park | City/County: El Cajon / San Diego | Sampling Date: 6/13/2008

Applicant/Owner: City of El Cajon | State: CA | Sampling Point: Transect B1

Investigator(s): Karl Osmundson, Kate Gentles | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Drainage feature | Local relief (concave, convex, none): concave | Slope (%): <5%

Subregion (LRR): C - Mediterranean California | Lat: 32.83 N | Long: 116.98 W | Datum: WGS 84

Soil Map Unit Name: Salinas | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Polypogon monspeliensis*	3	Yes	FACW
2. *Bromus madritensis ssp. rubens*	2	No	UPL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	5 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 95 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	3	x 2 =	6
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	2	x 5 =	10
Column Totals:	5 (A)		16 (B)

Prevalence Index = B/A = 3.20

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: Transect

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-5	10YR 3/2	100					Sandy loam	Smells of fuel
5-18	10YR 6/2	100					Clay w/ loam	Smells of fuel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Granitic bedrock

Depth (inches): 10 inches

Hydric Soil Present? Yes ◉ No ○

Remarks: Sample soil smelled of fuel. Much debris and litter was present in the soil sample. Land uses to the south and west are industrial, including an airport and warehouses.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix B
Photographs

Appendix B – Photos

Photo A-1: Catch basin on Weld Boulevard that conveys off-site flows to Drainage A.

Photo A-2: Thirty-six inch concrete pipe culvert that conveys off-site flows to Drainage A.

Photo A-3: Downstream view of Drainage A immediately downstream of 36-inch concrete pipe culvert (see Photo A-2).

Photo A-4: Tributary swale at middle reach of Drainage A. There is no defined bed and bank or OHWM. No functional riparian or wetland vegetation is present.

Photo A-5: Soil pit at Transect A-2 located downstream of salt cedar grove (*Tamarix* sp.). High water table can be seen.

Photo A-6: Terminus of Drainage A looking upstream. The bank and bed dissipate to a swale-like feature. No functional wetland or riparian vegetation is present.

Photo A-7: Terminus of Drainage A looking downstream. Surrounding vegetation is non-native grassland. The rut in the central foreground is from a motorized vehicle.

Photo B-1: Catch basin on Weld Boulevard that conveys off-site flows to Drainage B.

Photo B-2: Double concrete pipe culvert that conveys off-site flows to Drainage B, looking south. The bottom one-third of the western pipe (on right) is filled with sediment. Channel is centered on the eastern pipe (on left).

Photo B-3: Soil pit at Transect B-1 located downstream of culvert.

Photo B-4: Middle reach of Drainage B, looking downstream.

Photo B-5: Middle reach of Drainage B, looking upstream.

Photo B-6: Lower reach of Drainage B, looking upstream.

Photo B-7: Lower reach of Drainage B, looking downstream.

Photo B-8: Asphalt path at terminus of Drainage B, looking north toward Drainage C.

Photo C-1: Asphalt path at origin of Drainage C, looking south toward Drainage B.

Photo C-2: Fifteen foot long by one foot wide asphalt sinkhole at terminus of Drainage C. Culvert at terminus of Drainage C can be seen in the background.

Photo C-3: Middle reach of Drainage C looking upstream.

Photo C-4: Thirty-six inch concrete culvert located at the terminus of Drainage C. This culvert conveys flows from Drainage C to Forrester Creek.

Photo C-5: Forrester Creek at terminus of Drainage C looking upstream. Culvert opening to Drainage C is visible on the right.

Photo C-6: Forrester Creek at terminus of Drainage C looking downstream.

Photo D-1: Northern end of Drainage D. Foreground shows swale-like features and the background shows a channel with a somewhat defined bed and bank. No functional riparian or wetland vegetation is present. The surrounding vegetation is non-native grassland.

Photo D-2: Middle reach of Drainage D. No functional riparian or wetland vegetation is present.

Photo D-3: Southern end of Drainage D. Foreground shows swale-like features and the background shows an incised channel with a defined bed and bank. No functional riparian or wetland vegetation is present. The surrounding vegetation is disturbed habitat.

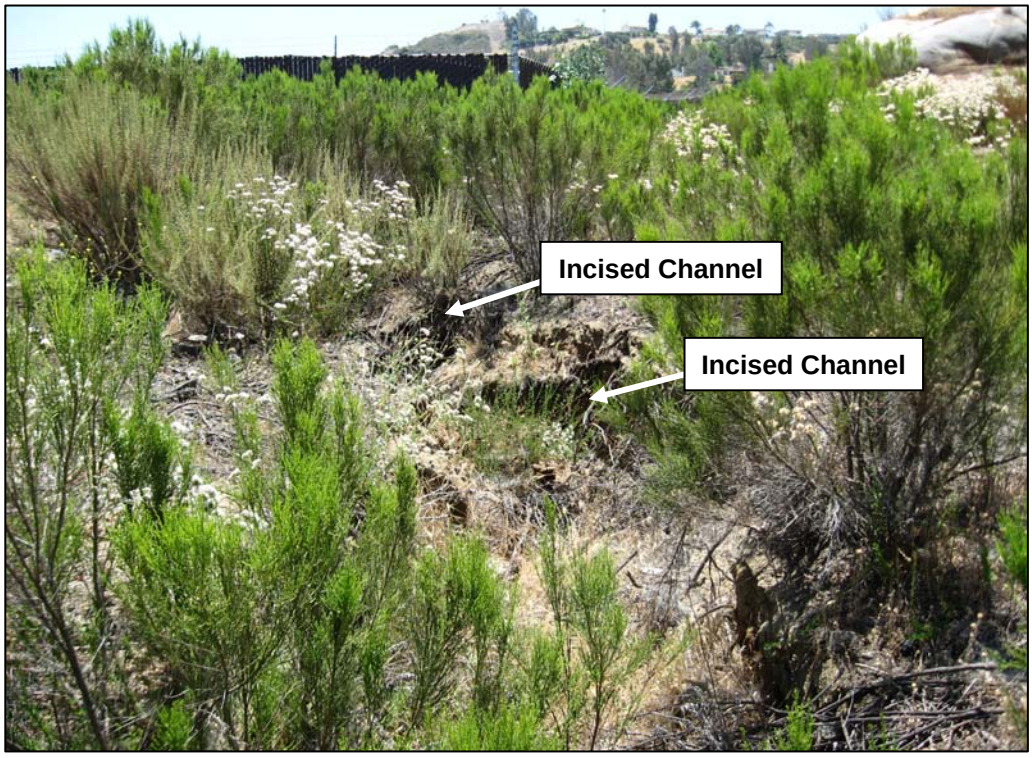

Photo E-1: Upper reach of Drainage E, an upland, isolated, erosional feature, looking upstream.

Photo E-2: Terminus of Drainage E, looking upstream. Drainage E transitions from a defined channel to swale-like features surrounded by non-native grassland.

Photo F-1: Square concrete culvert and spillway that conveys off-site flows to Drainage F.

Photo F-2: Water is present in Drainage F due to overtopping of spillway.

Photo F-3: Terminus of northern tributary to Drainage F. It appears that there would be limited water flow in this tributary and only during high flow events.

Photo F-4: Lower reach of Drainage F, looking upstream. The vegetation adjacent to this drainage is a mix of broadleaf cattails and eucalyptus.

Photo F-5: Lower reach of Drainage F, looking at the terminus. The dominant vegetation is broadleaf cattails and the terminus is surrounded by non-native grassland.

Photo F-6: Terminus of Drainage F, looking upstream.

Photo G-1: South end of Drainage G, an isolated swale-like feature. There is no defined bed and bank or OHWM. No functional riparian or wetland vegetation is present.

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